CLAIM LISTING

1. (previously presented) The system of Claim 45, further comprising:
   an error term generator configured to generate an error term;
   an adaptation coefficient configured to regulate a rate at which the error term modifies an actuator control signal; and
   an actuator control signal generator to generate the actuator control signal, wherein the actuator control signal is a function of a prior actuator position, the error term and the adaptation coefficient.

2. (original) The system of claim 1, wherein the error term generator is configured to generate the error term using a FES signal as input.

3. (original) The system of claim 2, wherein the error term generator is configured to sample the FES signal and use an A-to-D converter to produce the error term.

4. (original) The system of claim 1, wherein the error term generator is configured to calculate the error term for every new actuator control signal generated by the actuator control signal generator.

5. (original) The system of claim 1, wherein the actuator control signal generator additionally comprises:
   a coefficient generator to generate coefficients as a function of inputs comprising the adaptation coefficient and the error term; and
   a Fourier subroutine to generate the actuator control signal using the coefficients generated.

6. (cancelled)

7. (cancelled)

8. (cancelled)

9. (original) The system of claim 1, wherein the actuator control signal generator is configured, if an angular disk speed of the optical disk drive is sufficiently high, to shift a phase of terms within the actuator control signal to reduce actuator resonance.

10. (cancelled)

11. (previously presented) The system of claim 45, wherein the baseline actuator control signal includes an AC component.

12. (cancelled)

13. (previously presented) The system of claim 45, wherein the baseline actuator positioning routine is configured to set the baseline actuator control signal to approximately 75% of the actuator control signal which resulted in the maximum of the obtained SUM signals.

14. (previously presented) The processor readable medium of Claim 46, having further instructions for:

stepping through and applying actuator control signals to the actuator to step the generating an error term;

regulating a rate at which the error term modifies an actuator control signal using an adaptation coefficient; and

generating an actuator control signal as a function of a prior actuator position, the error term and the adaptation coefficient.

15. (original) The processor-readable medium of claim 14, comprising processor-executable instructions for generating the error term using a FES signal as input.

16. (original) The processor-readable medium of claim 15, comprising processor-executable instructions for sampling the FES signal and using an A-to-D converter to produce the error term.

17. (original) The processor-readable medium of claim 14, comprising processor-executable instructions for calculating the error term for every new actuator control signal generated by the actuator control signal generator.

18. (original) A processor-readable medium as recited in claim 14, wherein generating the actuator control signal comprises instructions for:

generating coefficients as a function of inputs comprising the adaptation coefficient and the error term; and

calculating a Fourier series to generate the actuator control signal using the coefficients generated.

19. (cancelled)

20. (cancelled)

21. (cancelled)

22. (cancelled)

23. (previously presented) The processor-readable media of claim 46, wherein the instructions for setting the baseline actuator control signal comprise instructions for setting different baseline actuator control signals for different sectors of the disk.

24. (cancelled)

25. (previously presented) The method of Claim 47, further comprising:

generating an error term;

regulating a rate at which the error term modifies an actuator control signal using an adaptation coefficient; and

generating an actuator control signal as a function of a prior actuator position, the error term and the adaptation coefficient.

26. (original) The method of claim 25, additionally comprising generating the error term using a FES signal as input.

27. (original) The method of claim 25, additionally comprising sampling the FES signal and using an A-to-D converter to produce the error term.

28. (original) The method of claim 25, additionally comprising calculating the error term for every new actuator control signal generated by the actuator control signal generator.

29. (original) The method of claim 25, wherein generating the actuator control signal comprises:

generating coefficients as a function of inputs comprising the adaptation coefficient and the error term; and

calculating a Fourier series to generate the actuator control signal using the coefficients generated.

30. (cancelled)

31. (cancelled)

32. (cancelled)

33. (cancelled)

34. (original) The method of claim 25, wherein generating the actuator control signal additionally comprising, if an angular disk speed of the optical disk drive is sufficiently high, shifting a phase of terms within the actuator control signal to compensate for actuator harmonics.

35. (previously presented) The system of Claim 48, further comprising:
means for generating an error term;
means for regulating a rate at which the error term modifies an actuator control signal using an adaptation coefficient; and
means for generating an actuator control signal as a function of a prior actuator position, the error term and the adaptation coefficient.

36. (original) The focusing system of claim 35, additionally comprising means for generating the error term using a FES signal as input.

37. (original) The focusing system of claim 35, additionally comprising means for sampling the FES signal and using an A-to-D converter to produce the error term.

38. (original) The focusing system of claim 35, additionally comprising means for calculating the error term for every new actuator control signal generated by the actuator control signal generator.

39. (original) The focusing system of claim 35, wherein the means for generating the actuator control signal comprises:
means for generating coefficients as a function of inputs comprising the adaptation coefficient and the error term; and
means for calculating a Fourier series to generate the actuator control signal using the coefficients generated.

40. (cancelled)

41. (cancelled)

42. (cancelled)

43. (previously presented) The focusing system of claim 48, wherein the means for setting the baseline actuator control signal comprise means for setting different baseline actuator control signals for different sectors of the disk.

44. (cancelled)

45 (currently amended) A system for establishing ~~an~~ a baseline signal for application to an actuator within an optical disk drive to focus optics on an optical disk within the optical disk drive, the system comprising ~~the~~ a baseline actuator positioning routine ~~is~~ configured to:

apply actuator control signals to the actuator to step the actuator through a full range of focus;

obtain a SUM signal at each step, the SUM signal being a sum of signals received from a plurality of focus sensors;

identify one of the obtained SUM signals; and

set the baseline actuator control signal according an applied actuator control signal which resulted in the identified one of the obtained SUM signals.

46. (currently amended) A processor-readable medium comprising processor-executable instructions for focusing optics within an optical disk drive, the processor-executable instructions comprising instructions for:

applying actuator control signals to the actuator to step the actuator through a full range of focus;

obtaining a SUM signal at each step, the SUM signal being a sum of signals received from a plurality of focus sensors;

identifying one of the obtained SUM signals; and

setting the baseline actuator control signal according an applied actuator control signal which resulted in the identified one of the obtained SUM signals.

47. (currently amended) A method of establishing ~~an~~ a baseline signal for application to an actuator within an optical disk drive to focus optics on an optical disk within the optical disk drive, the method comprising:

applying actuator control signals to the actuator to step the actuator through a full range of focus;

obtaining a SUM signal at each step, the SUM signal being a sum of signals received from a plurality of focus sensors;

identifying one of the obtained SUM signals; and

setting the baseline actuator control signal according an applied actuator control signal which resulted in the identified one of the obtained SUM signal;

48. (currently amended) A system for establishing ~~an~~ a baseline signal for application to an actuator within an optical disk drive to focus optics on an optical disk within an optical disk drive, the system comprising:

means for applying actuator control signals to the actuator to step the actuator through a full range of focus;

means for obtaining a SUM signal at each step, the SUM signal being a sum of signals received from a plurality of focus sensors;

means for identifying one of the obtained SUM signals; and

means for setting the baseline actuator control signal according an applied actuator control signal which resulted in the identified one of the obtained SUM signal.